

List of All Chemicals

P *Ilex paraguariensis* (Aquifoliaceae)

Common name(s)

South American Holly; Mate; Paraguay Tea

How used

Food

*Unless otherwise noted all references are to Duke, James A. 1992. Handbook of phytochemical constituents of GRAS herbs and other economic plants. Boca Raton, FL. CRC Press.

Chemical	Plant Part	Low PPM	High PPM	StdDev	*Reference
2,5-XYLENOL	Leaf	--	--		*
4-OXOLAURIC-ACID	Leaf	--	--		*
5-O-CAFFEOYLQUINIC-ACID	Leaf	--	--		*
Activities (1)					
Antioxidant					
ASH	Seed	--	13000.0	-1.05	*
ASH	Leaf	--	42500.0	-1.35	*
BETA-AMYRIN	Leaf	--	--		*
Activities (9)					
Analgesic					
Antiedemic IC27=40 mg/kg ipr rat					
Antiinflammatory					
Antinociceptive					
Antiulcer					
Gastroprotective					
Hepatoprotective					
Larvicide					
Mosquitocide					
BUTYRIC-ACID	Leaf	--	--		*
Activities (6)					
Anticancer	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Antitumor	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Apoptotic					
Bruchifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.				
Nematistat 880 ug/ml	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.				
Pesticide					
CAFFEINE	Leaf	2000.0	20000.0	-0.44	*
Activities (62)					
(+)-Inotropic	Bruneton, J. 1999. Pharmacognosy, Phytochemistry, Medicinal Plants. 2nd Ed. Lavoisier Publishing, Paris. 1119 pp.				
Adenosine-Antagonist	McKenna, D. J., Hughes, K., and Jones, K. 2000. Green Tea Monograph. Alternative Therapies, 6(3): 61-82.				
Analeptic 200 scu mus	Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. Drug Dosage in Laboratory Animals: A Handbook. (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006.				
Analgesic-Synergist					
Antiapneic	Martindale's 29th				
Antiapoptotic					
Antiasthmatic 5-10 mg/kg ori/man	Martindale's 29th				
Anticarcinogenic					
Anticariogenic					
Antidermatitic	Martindale's 29th				
Antiemetic	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.				
Antifeedant	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.				

Antiherpetic	
Antihypotensive 250 mg/day/orl/man	Martindale's 29th
Antinarcotic	Williamson, E. M. and Evans, F. J., <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Antibesity	
Antioxidant	
Antirhinitic 140 mg/day/orl/man	Martindale's 29th
Antiserotonergic 40 ipr rat	Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. <i>Drug Dosage in Laboratory Animals: A Handbook</i> . (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006.
Antiserotonergic 40 scu rat	Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. <i>Drug Dosage in Laboratory Animals: A Handbook</i> . (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006.
Antitumor	
Antitumor (Lung)	
Antivaccinia	
Antiviral	Vlietinck, A.J. and Domisse, R.A. eds. 1985. <i>Advances in Medicinal Plant Research</i> . Wiss. Verlag. Stuttgart.
Apoptotic	
Arrhythmogenic 1,500 mg/man	
CNS-Stimulant 100 orl mus	
CNS-Stimulant 30 orl rat	
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Cardiotonic 10-25 orl dog	Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. <i>Drug Dosage in Laboratory Animals: A Handbook</i> . (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006.
Cardiotonic 65-500 orl cat	Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. <i>Drug Dosage in Laboratory Animals: A Handbook</i> . (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006.
Catabolic	Abstract (See species file)
Choleretic	
Coronary-Dilator	McKenna, D. J., Hughes, K., and Jones, K. 2000. <i>Green Tea Monograph</i> . Alternative Therapies, 6(3): 61-82.
Diuretic	
Energizer 20-200 mg/man	
Ergotamine-Enhancer	Martindale's 29th
FLavor FEMA 125	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Herbicide	
Hypertensive	
Hypoglycemic	
Insecticide	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Lypolytic	Bruneton, J. 1999. <i>Pharmacognosy, Phytochemistry, Medicinal Plants</i> . 2nd Ed. Lavoisier Publishing, Paris. 1119 pp.
Myorelaxant	McKenna, D. J., Hughes, K., and Jones, K. 2000. <i>Green Tea Monograph</i> . Alternative Therapies, 6(3): 61-82.
Neurotoxic	R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. <i>This and That: The Essential Pharmacology of Herbs and Spices</i> . Tips 13:15-20 Huxtable, R.J. 1992b. <i>The Myth of Benificent Nature</i> . The Risk of Herbal Preparations. Anns. Intern. Med. 117(2):165-6; Huxtable, R.
Pesticide	
Phosphodiesterase-Inhibitor	
Pyrogenic 60 mg/day oral hmnn	Daroca, P., Rodriguez, J., Reano, M., Canto, G., Miranda, P. 1996. <i>Fever From Caffeine</i> . Allergy, 51(3): 189-191.
Pyrogenic 13.3 mg/kg ipr rbt	Dascombe, M. J. 1977. Effects of Methylxanthine Drugs on Pyrogen-Induced Hyperthermia. Eur J Pharmacol, 45: 389-392.
Pyrogenic 15 mg/kg ipr cat	Dascombe, M. J. 1977. Effects of Methylxanthine Drugs on Pyrogen-Induced Hyperthermia. Eur J Pharmacol, 45: 389-392.
Respirastimulant	
Spasmogenic 1,500 mg/man	
Stimulant	R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. <i>This and That: The Essential Pharmacology of Herbs and Spices</i> . Tips 13:15-20 Huxtable, R.J. 1992b. <i>The Myth of Benificent Nature</i> . The Risk of Herbal Preparations. Anns. Intern. Med. 117(2):165-6; Huxtable, R.
Tachycardic 1,500 mg/man	
Teratogenic 14 orl rat	Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. <i>Drug Dosage in Laboratory Animals: A Handbook</i> . (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006.
Topoisomerase-I-Inhibitor 0.1 nM	Tohda, H., Zhao, J. H., Oikawa, A. 1992. A Possible Involvement of DNA Topoisomerase I in 'Caffeine Effect' After Ultraviolet Irradiation. Tohoku J Exp Med, 168: 129-132.
Topoisomerase-I-Inhibitor 75 uM	Shin, C. G., Strayer, J. M., Wani, M., Snapka, R. M. 1990. Rapid Evaluation of Topoisomerase Inhibitors: Caffeine Inhibition of Topoisomerases in vivo. Teratogen Carcinogen Mutagen, 10: 41-52.
Topoisomerase-II-Inhibitor 99 mM	Shin, C. G., Strayer, J. M., Wani, M., Snapka, R. M. 1990. Rapid Evaluation of Topoisomerase Inhibitors: Caffeine Inhibition of Topoisomerases in vivo. Teratogen Carcinogen Mutagen, 10: 41-52.
Vasodilator	Bruneton, J. 1999. <i>Pharmacognosy, Phytochemistry, Medicinal Plants</i> . 2nd Ed. Lavoisier Publishing, Paris. 1119 pp.
cAMP-Phosphodiesterase-Inhibitor	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).
cGMP-Phosphodiesterase-Inhibitor	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).

CHLOROGENIC-ACID

Leaf

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Aldose-Reductase-Inhibitor IC50=1.8 uM rat (strong activity)	Yoshikawa, M., et al. 1999. Medicinal Flowers. I. Aldose Reductase Inhibitors and Three New Eudesmane-Type Sesquiterpenes, Kikkanols A, B, and C, From the Flowers of Chrysanthemum indicum L. <i>Chem Pharm Bull</i> , 47(3): 340-345.
Allelochemical	
Allergenic	
Analgesic	
AntiEBV	Economic & Medicinal Plant Research, 6: 189.
AntiHIV	Economic & Medicinal Plant Research, 6: 189.
AntiLegionella	
Antiatherosclerotic	
Antibacterial	
Anticancer (Colon)	
Anticancer (Forestomach)	
Anticancer (Liver)	
Anticancer (Skin)	
Anticarcinogenic	
Antidiabetic	
Antifeedant	
Antigenotoxic	
Antigonadotropic	Jim Duke's personal files.
Antihemolytic 10 uM	Ohnishi, M., Morishita, H., Iwahashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. <i>Phytochemistry</i> . 36(3): 579-583. 1994.
Antihepatotoxic	
Antiherpetic	Economic & Medicinal Plant Research, 5: 194.
Antihistaminic	
Antihypercholesterolemic	Economic & Medicinal Plant Research, 6: 189.
Antihyperthyroid	
Antiinflammatory	Hagerman, A.E. <i>Tannin-Protein Interactions. Phenolic Compounds in Food and Their Effects on Health</i> , Ch.19.
Antileukotriene	
Antimelanogenic	
Antimutagenic	
Antinitrosaminic	
Antioxidant IC53=200 ppm	Huang, M-T., and Ferraro, T. <i>Phenolic Compounds in Food and Cancer Prevention. Phenolic Compounds in Food and Their Effects on Health</i> , Ch.2 p.21.
Antioxidant IC80=12 uM	
Antioxidant IC50=54.2 uM	
Antiperoxidant IC50=36 uM	Planta Medica, 57: A54, 1991.
Antipolio	Jim Duke's personal files.
Antiradicular 10 uM	Ohnishi, M., Morishita, H., Iwahashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. <i>Phytochemistry</i> . 36(3): 579-583. 1994.
Antiradicular 9 x quercetin	
Antiseptic	
Antisunburn	
Antithyroid	Jim Duke's personal files.
Antitumor	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, Londón. 791 pp.
Antitumor (Colon)	
Antitumor (Forestomach)	
Antitumor (Liver)	
Antitumor (Skin)	
Antitumor-Promoter IC25=10 uM	
Antiulcer	Economic & Medicinal Plant Research, 6: 189.
Antiviral	Vlietinck, A.J. and Dommisse, R.A. eds. 1985. <i>Advances in Medicinal Plant Research</i> . Wiss. Verlag, Stuttgart.
Autotoxic	
CNS-Active	Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch für Apotheker und Ärzte</i> . Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
CNS-Stimulant 1/6 Caffeine	
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Cardioprotective	
Chempreventive	
Cholagogue	Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch für Apotheker und Ärzte</i> . Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Choleretic	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.
Clastogenic	Friedman, M. and Dao, L. 1990. Effect of Autoclaving and Conventional and Microwave Baking on the Ergot Alkaloid and Chlorogenic Acid Contents of Morning Glory (<i>Ipomoea tricolor</i> Cav. cv.) Heavenly Blue Seeds. <i>J. Agric. Food Chem</i> . 38: 805-808.
Collagen-Sparing	
Diuretic	
Fungicide	Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp.
Hepatoprotective	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.
Histamine-Inhibitor	
Hypoglycemic	
Immunostimulant	

Interferonogenic	ECONOMIC BOTANY 48(2), 111-120, 1994.
Juvabional	Economic & Medicinal Plant Research, 1: 124.
Larvistat	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Leukotriene-Inhibitor	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, Londón. 791 pp.
Lipoxygenase-Inhibitor IC23=5 mM	Oszmianski, J. and Lee, C.Y. 1990. Inhibitory Effect of Phenolics on Carotene Bleaching in Vegetables. J. Agric. Food Chem. 38: 688-690.
Metal-Chelator	McEvily, A.J., Iyengar, R., and Gross, A.T. Inhibition of Polyphenol Oxidase by Phenolic Compounds. Phenolic Compounds in Food and Their Effects on Health, Ch.25.
NO-Genic	
Ornithine-Decarboxylase-Inhibitor	Hagerman, A.E. Tannin-Protein Interactions. Phenolic Compounds in Food and Their Effects on Health, Ch.19.
Oviposition-Stimulant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, Londón. 791 pp.
Pesticide	
Sunscreen	
Sweetener	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Vulnerary	

CHLOROPHYLL	Leaf	--	19000.0	-0.24	*
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Activities (21)

Antibacterial	
Anticancer	Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY.
Anticancer (Colon)	Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY.
Anticancer (Liver)	Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY.
Antidecubitic	
Antihalitotic	
Antimorrhagic 25 mg/day/wmn/orl	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antimutagenic	Lawson, T., J. Nunnally, B. Walker, E. Bresnick, D. Wheeler, and M. Wheeler. 1989. Isolation of compounds with antimutagenic activity from savoy chieftain cabbage. J. Agric. Food Chem. 37:1363-1367.
Antitoxic	
Antioxidant	
Antirhinitic	
Antisinusitic	
Antiulcer	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Colorant	Martindale's 28th
Deodorant	Merck 11th Edition
Dye	
Oxidant	
Perfumery	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Pesticide	
Vulnerary	

CHOLINE	Leaf	--	--	--	*
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Activities (20)

Antialzheimeran 5-16 g/man/day	
Antichoreic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Anticirrhotic 6,000 mg/man/day	
Anticystinuric	
Antidementia	
Antidiabetic	
Antidyskinetic 150-200 mg/kg/man/day	Martindale's 28th
Antihomocysteine	
Antimanic 15-30 g/man/day/orl	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antinociceptive	
Antisteatotic	
Cardiodepressant	
Cerebrotonic	
Cholinergic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Hepatoprotective	
Hypotensive	
Ileorelaxant	
Lipotropic	
Memorigenic	

acetylcholine)

EO	Leaf	--	3000.0	-0.75	*
FAT	Seed	161000.0	173000.0	-0.49	*
FIBER	Leaf	--	176800.0	0.19	*

Activities (15)

Angiotensin-Receptor-Blocker	
Antidiabetic	
Antihypertensive	
Antiobesity	
Antitumor	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiulcer	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Beta-Blocker	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Cardioprotective	
Diuretic	
Hypocholesterolemic	
Hypotensive 10 g/man/day/orl	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Hypouricemic	
Laxative	
Vasodilator	

INOSITOL	Leaf	--	--	--	*
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Activities (8)

Antialopeptic	
Anticirrhotic	
Antidiabetic?	Martindale's 29th
Antineuropathic? 2 g/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Cholerolytic 2,000 mg/man/day	
Lipotropic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Sweetener	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Ubiquiot	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

ISOBUTYRIC-ACID	Leaf	--	--	--	*
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Activities (2)

Irritant	
Transdermal	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.

ISOCAPRONIC-ACID	Leaf	--	--	--	*
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ISOVALERIC-ACID	Leaf	--	--	--	*
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Activities (5)

FLavor FEMA 1-16	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Irritant	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Perfumery	Merck 11th Edition
Sedative	
Tranquilizer	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.

NEO-CHLOROGENIC-ACID	Leaf	--	--	--	*
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Activities (2)

Antiinflammatory	
Vulnerary	

NICOTINIC-ACID	Leaf	--	--	--	*
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Activities (11)

AntiCrohn's	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antichilblain 50 mg/3x/day	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.

Antischizophrenic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antithyroidal	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Choleretic	
Hypocholesterolemic 1-6 g/man/day	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Hypoglycemic	
Insulinase-Inhibitor	Economic & Medicinal Plant Research, 6: 157.
Insulinotonic	Economic & Medicinal Plant Research, 6: 157.
Lipolytic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
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NITROGEN	Leaf
	--
	30000.0
	-0.69
	*
PANTOTHENIC-ACID	Leaf
	--
	--
	*
<hr/> Activities (11)	
Antiallergic 100-500 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antiarthritic 500-2,000 mg/day	
Anticephalagic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Anticlaudificant?	Martindale's 29th
Antidermatitic	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
Antifatigue	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antihypercholesterolemic 300 mg/meal	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antihielus?	Martindale's 29th
Antiinsomniac?	Martindale's 29th
Antirheumatitic?	Martindale's 29th
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
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PRBER	Seed
	520000.0
	560000.0
	*
PROTEIN	Seed
	64000.0
	69000.0
	-1.47
	*
PROTEIN	Leaf
	--
	190000.0
	-0.22
	*
PYRIDOXINE	Leaf
	--
	--
	*
<hr/> Activities (43)	
Analgesic 50 mg day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
AntiMSG-Sensitivity 50 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
AntiMorning-Sickness	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
AntiPMS 100 mg/day/orl/wmn	Martindale's 29th
AntiPMS 50 mg/day	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
AntiTMJ 50 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antiacne 50 mg/day	
Antiaggregant 40 mg/day	
Antianemic 50-400 mg/man/day	
Antiasthmatic 100-200 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antiatherosclerotic 40 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antiautistic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Anticarpal-Tunnel 100-150 mg/day/12 wks/orl/man	Martindale's 29th
Anticheilitic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antidepressant 40-50 mg day	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antidermatitic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antidiabetic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antidote (Hydrazine) 10 g ivn	Martindale's 29th
Antidyskinetic 250-300 mg/man/4x/day	Martindale's 28th
Antiemetic 20-200 mg/man/day	Martindale's 28th
Antiepileptic 40 mg/day	
Antiglossitic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antihomocystinuric 40 mg/day	
Antihyperkinetic 1.5-2 g/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antihyperventilation 40 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antiinfertility 40 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antilithic 40 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antinephritic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antineuritic 150 mg/man/day	Martindale's 28th
Antineuropathic 50 mg	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.

Antiparkinsonian 50 mg day	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiprolactin	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antiradiation	Martindale's 28th
Antischizophrenic 50 mg/man/3x/day	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antiseborrheic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antisickling	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antispasmodic 100 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antiulcer	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antivertigo	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Dopaminergic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Neurotoxic 2-6 g/day for 2-24 mos	Martindale's 29th
Progesteronogenic 40 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.

RESIN	Leaf	--	48000.0	-0.37	*
RESINIC-ACID	Leaf	--	--		*
RIBOFLAVIN	Leaf	--	--		*

Activities (15)

AntiLyme 50 mg/day	
Antiarabiflavinotic 2-10 mg/day orl	Martindale's 28th
Anticarpal-Tunnel 50 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Anticataract 15 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Anticephalitic	
Anticervicaldysplastic 1.6-10 mg/day	
Anticheilitic	
Antidecubitic	
Antiglossitic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antikeratitic	
Antimigraine	
Antioxidant	
Antipellicaric	
Antiphotophobic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.

RUTIN	Leaf	--	--		*
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Activities (87)

5-HT-Inhibitor	
Aldehyde-Oxidase-Inhibitor IC27-52=10 uM	
Aldose-Reductase-Inhibitor 100 uM	
Aldose-Reductase-Inhibitor 4 ug/ml	Ichikawa, K., et al. 1991. Isolation and Structure Determination of Aldose Reductase Inhibitors from Traditional Thai Medicine, and Syntheses of Their Derivatives. <i>Sankyo Kenkyusho Nempo</i> , 43: 99-110.
Allelochemic	
AntiCVI 270 mg/man/day	
Antiaggregant ED50=33 nmol/kg iv	
Antiallergic	
Antiapoplectic	
Antiatherogenic	
Antiatherosclerotic	
Antibacterial	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Anticancer	
Anticapillary-Fragility 20-100 mg orl man	Merck 7th Ed.
Anticataract	
Anticlastogen	
Anticonvulsant	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.
Antidementia	Bruneton, J. 1999. <i>Pharmacognosy, Phytochemistry, Medicinal Plants</i> . 2nd Ed. Lavoisier Publishing, Paris. 1119 pp.
Antidermatitic	Bisset, N.G., ed. 1994. <i>Herbal Drugs and Phytopharmaceuticals</i> . CRC Press. Boca Raton, FL. 566 pp.
Antidiabetic	Jin, G-Z., Yamagata, Y., and Tomita, K-i. 1989. Structure of Rutin Pentamethanol. <i>Chem. Pharm. Bull.</i> 38(2): 297-300, 1990.
Antiedemic 270 mg/day orl man	
Antiarrhythmic	
Antifeedant	

Antihematuric	
Antihemorrhoidal	
Antihepatotoxic	Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.
Antiherpetic	Economic & Medicinal Plant Research, 5: 198.
Antihistaminic	
Antihypertensive	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.
Antiinflammatory 20 mg/kg	
Antimalarial IC50=>100 ug/ml	Khalid, S.A., Farouk, A., Geary**, T.G., and Jensen, J.B. 1985. Potential Antimalarial Candidates From African Plants: An In Vitro Approach Using <i>Plasmodium falciparum</i> *. Journal of Ethnopharmacology, 15: 201-209, 1986.
Antimelanomic	
Antimetastatic	
Antimutagenic ID50=2-5 nM	
Antinephritic	
Antinociceptive	
Antioxidant IC28=30 ppm	
Antioxidant IC50=120 uM	
Antioxidant IC54=10 uM	
Antiperoxidant IC50=10-20 uM	
Antiplatelet	
Antiproliferant 50-75 uM/l	
Antiprotozoal	
Antipurpuric	
Antiradicular 9 x quercetin	
Antispasmodic	
Antisunburn	
Antithrombogenic EC50=500 nM	
Antithyroid IC50=68 uM	
Antitrypanosomic 100 mg/kg	Planta Medica, 57: A44, 1991.
Antitumor	
Antitumor-Promoter	
Antiulcer	
Antivaricose	
Antiviral	
Apoptotic 75 uM/l	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Capillariprotective	Merck 11th Edition
Catabolic	
Chemopreventive	
Cytoprotective IC50=3 uM	
Estrogenic?	Economic & Medicinal Plant Research, 6: 189.
Hemostat	
Hepatomagenic 20,000 ppm (diet) rat	Phenolic Compounds in Food and Their Effects on Health. Antioxidants & Cancer Prevention. Huang, M.T., Ho, C.T. and Lee, C.Y. eds. 1992. ACS Symposium Series 507. ACS, Washington 402 pp.
Hepatoprotective 20 mg/kg rat	
Hypocholesterolemic	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.
Hypotensive	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Immunomodulator	
Insecticide	Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.
Insectiphile	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Juvabional	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Larvistat IC95=4,000-8,000 ppm diet	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.
Lipoxygenase-Inhibitor IC75=2.5 mM	Oszmianski, J. and Lee, C.Y. 1990. Inhibitory Effect of Phenolics on Carotene Bleaching in Vegetables. J. Agric. Food Chem. 38: 688-690.
Mutagenic	Economic & Medicinal Plant Research, 6: 189.
Myoprotective	
Myorelaxant	Economic & Medicinal Plant Research, 6: 189.
Oviposition-Stimulant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
PAF-Inhibitor	
Pesticide	
Protisticide	
Radioprotective	
Sunscreen	

Vasodilator

Vasopressor

cAMP-
Phosphodiesterase-
Inhibitor

Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).

STEARIC-ACID

Leaf

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Activities (8)

5-Alpha-Reductase-
Inhibitor

Cosmetic Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

Flavon FEMA 2-4,000

Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Hypocholesterolemic

Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)

Lubricant

Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

Perfumery

Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Propecic

Suppository

Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

TANNIN

Leaf

40000.0

160000.0

0.6

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Activities (35)

Anthelmintic

AntiHIV

Antibacterial

Anticancer

Anticariogenic

Antidiarrheic

Antidysenteric

Ant hepatotoxic

Antihypertensive

Antilipolytic

Antimutagenic

Antinephritic

Uchida, U., Ohta, H., Niwa, M., Mori, A., Nonaka, G-i., Nishioka, I., and Zaki, M. 1989. Prolongation of Life Span of Stroke-Prone Spontaneously Hypertensive Rats (SHRSP) Ingesting Persimmon Tannin. *Chem. Pharm. Bull.* 38(4): 1049-1052, 1990.

Antiofphidic

Economic & Medicinal Plant Research, 5: 363.

Antioxidant
IC50=1.44 ug/mlAntioxidant 1/3
querceatinAntiradicular 500
mg/kg/day orl musUchida, U., Ohta, H., Niwa, M., Mori, A., Nonaka, G-i., Nishioka, I., and Zaki, M. 1989. Prolongation of Life Span of Stroke-Prone Spontaneously Hypertensive Rats (SHRSP) Ingesting Persimmon Tannin. *Chem. Pharm. Bull.* 38(4): 1049-1052, 1990.Antiradicular 1/3
querceatin

Antirenitic

Uchida, U., Ohta, H., Niwa, M., Mori, A., Nonaka, G-i., Nishioka, I., and Zaki, M. 1989. Prolongation of Life Span of Stroke-Prone Spontaneously Hypertensive Rats (SHRSP) Ingesting Persimmon Tannin. *Chem. Pharm. Bull.* 38(4): 1049-1052, 1990.

Antitumor

Antitumor-Promoter

Antiulcer

Antiviral

Cancer-Preventive HerbalGram No. 22 - Spring 1990, page 14.

Carcinogenic

Chelator

Cyclooxygenase-
InhibitorGlucosyl-
Transferase-Inhibitor

Hepatoprotective

Immunosuppressant

Lipoxygenase-
Inhibitor

MAO-Inhibitor

Ornithine-
Decarboxylase-
Inhibitor

Pesticide

Psychotropic

Uchida, U., Ohta, H., Niwa, M., Mori, A., Nonaka, G-i., Nishioka, I., and Zaki, M. 1989. Prolongation of Life Span of Stroke-Prone Spontaneously Hypertensive Rats (SHRSP) Ingesting Persimmon Tannin. *Chem. Pharm. Bull.* 38(4): 1049-1052, 1990.Xanthine-Oxidase-
Inhibitor

THEOBROMINE

Leaf

960.0

5000.0

1.0

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ACTIVITIES (21)

Anorexic	Martindale's 28th
Antiasthmatic 10 mg/kg/orl/man	Martindale's 29th
Anticellulitic	
Arteriodilator	
Bronchodilator	Merck 11th Edition
CNS-Stimulant	
Cardiotonic	Merck 11th Edition
Diuretic 300-600 mg/man/day	Martindale's 28th
Emetic	Martindale's 28th
Fetotoxic 100 mg/kg	
Herbicide IC41=100 ppm	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.
Myocardiotonic	
Myorelaxant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Myostimulant	Martindale's 29th
Pesticide	
Stimulant	
Teratogenic 100 mg/kg	
Vasodilator	Merck 11th Edition
cAMP-Inhibitor IC50=0.06 mg/ml	Schussler, M., Fricke, U., Nikolov, N., and Holzl, J. 1991. Comparison of the Flavonoids Occurring in Crataegus species and Inhibition of 3',5'-Cyclic Adenosine Monophosphate Phosphodiesterase. Plant Medica 57: Suppl Issue 2. p.A-133.
cAMP-Phosphodiesterase-Inhibitor	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
cGMP-Phosphodiesterase-Inhibitor	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).

THEOPHYLLINE	Leaf	--	500.0	1.0	*

Activities (36)

(+)-Inotropic	Bruneton, J. 1999. Pharmacognosy, Phytochemistry, Medicinal Plants. 2nd Ed. Lavoisier Publishing, Paris. 1119 pp.
Allergenic	Martindale's 29th
Antiapneic	Martindale's 29th
Antiasthmatic 5 mg/kg/orl/man	Martindale's 29th
Antibradyarrhythmic	Martindale's 29th
Antibronchitic	
Anticellulitic	
Antidote Charcoal & Propanolol	Martindale's 29th
Antiemphysemic	Martindale's 29th
Antineuragic	Martindale's 29th
Antirhinitic	Martindale's 29th
Antispasmodic 100 uM	
Antiviral	
Arteriodilator	
Bronchodilator	
CNS-Stimulant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Cardiovascular 30 mg/kg orl rat	Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. Drug Dosage in Laboratory Animals: A Handbook. (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006.
Choleretic	
Diuretic 15 mg/kg ivn rbt	Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. Drug Dosage in Laboratory Animals: A Handbook. (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006.
Fetotoxic 100 mg/kg	
Herbicide IC58=100 ppm	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.
Hypertensive	LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of Allium sativum L. and related species. Williams & Wilkins, Baltimore. 329 pp.
Hyperuricemic	Martindale's 29th
Hypoglycemic	
Myocardiotonic	Martindale's 29th
Myorelaxant 100 uM	
Pesticide	
Prostaglandin-Secretor 10 mg/kg orl rat	Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. Drug Dosage in Laboratory Animals: A Handbook. (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006.
Stimulant	
Tachycardic	Martindale's 29th
Teratogenic	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
Vasodilator	

IC50=0.06 mg/ml	Adenosine Monophosphate Phosphodiesterase. <i>Plant Medica</i> 57: Suppl Issue 2. p.A-133.
cAMP-Phosphodiesterase-Inhibitor	
cGMP-Inhibitor	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).
cGMP-Phosphodiesterase-Inhibitor	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).

TRIGONELLINE	Leaf	--	--	*
Activities (15)				
Anticancer (Cervix)	Williamson, E. M. and Evans, F.J., <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.			
Anticancer (Liver)	Williamson, E. M. and Evans, F.J., <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.			
Antihyperglycemic	Iwu, M.M. 1993. <i>Handbook of African Medicinal Plants</i> . CRC Press, Boca Raton, FL 435 pp.			
Antimigraine				
Antiseptic	Iwu, M.M. 1993. <i>Handbook of African Medicinal Plants</i> . CRC Press, Boca Raton, FL 435 pp.			
Antitumor (Cervix)				
Antitumor (Liver)				
Epidermal-Stimulant				
Hypocholesterolemic				
Hypoglycemic 500-3,000 mg/man/day	Martindale's 28th			
Hypoglycemic 50 mg/kg orl rat	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.			
Mutagenic				
Osmoregulator				
Pesticide				
Propecic				

URSOLIC-ACID	Leaf	--	--	*
Activities (89)				
Analgesic				
AntiEBV	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.			
AntiHIV EC50=2.0 ug/ml	Kashiwada, Y., et. al. 1998. <i>Anti-AIDS Agents</i> . 30. Anti-HIV Activity of Oleanolic Acid, Pomolic Acid, and Structurally Related Triterpenoids. <i>J. Nat. Prod.</i> , 61 (9): 1090-1095.			
AntiHIV IC50=6.5 ug/ml	Kashiwada, Y., et. al. 1998. <i>Anti-AIDS Agents</i> . 30. Anti-HIV Activity of Oleanolic Acid, Pomolic Acid, and Structurally Related Triterpenoids. <i>J. Nat. Prod.</i> , 61 (9): 1090-1095.			
AntiHIV IC85=18 ug/ml				
AntiHIV 6.7 uM				
AntiTGF-beta IC50=6-7.5 uM				
Antialzheimeran	Ringbom, T., Seguar, L., Noreen, Y., Perera, P., Bohlin, L. 1998. Ursolic Acid from <i>Plantago major</i> , a Selective Inhibitor of Cyclooxygenase-2 Catalyzed Prostaglandin Biosynthesis. <i>J. Nat. Prod.</i> , 61(10): 1212-1215.			
Antiarrhythmic				
Antiarthritic	Planta Medica, 57: A56, 1991.			
Antibacterial				
Anticancer	Ringbom, T., Seguar, L., Noreen, Y., Perera, P., Bohlin, L. 1998. Ursolic Acid from <i>Plantago major</i> , a Selective Inhibitor of Cyclooxygenase-2 Catalyzed Prostaglandin Biosynthesis. <i>J. Nat. Prod.</i> , 61(10): 1212-1215.			
Anticancer (Colon)	Ringbom, T., Seguar, L., Noreen, Y., Perera, P., Bohlin, L. 1998. Ursolic Acid from <i>Plantago major</i> , a Selective Inhibitor of Cyclooxygenase-2 Catalyzed Prostaglandin Biosynthesis. <i>J. Nat. Prod.</i> , 61(10): 1212-1215.			
Anticarcinomic	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.			
Anticariogenic	Leung, A. Y. and Foster, S. 1995. <i>Encyclopedia of Common Natural Ingredients</i> 2nd Ed. John Wiley & Sons, New York. 649 pp.			
Anticholestatic 28-100 mg/kg orl	Shukla, B., Visen, P.K.S., Patnaik, G.K., Tripathi, S.C., Srimal, R.C., Dayal, R., and Dobhal, P.C. Hepatoprotective Activity in the Rat of Ursolic Acid Isolated from Eucalyptus Hybrid. <i>Phytotherapy Research</i> 6: 74-79, 1992.			
Anticomplement IC100 0.1 mM/l gpg	Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. <i>Hager's Handbuch der Pharmazeutischen Praxis</i> , Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.			
Anticomplement IC80-90 0.05 mM/l gpg	Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. <i>Hager's Handbuch der Pharmazeutischen Praxis</i> , Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.			
Antidiabetic	Chemical Constituents of Oriental Herbs (3 diff. books)			
Antiedemic				
Antiescherichic				
Antifibrosarcomic IC80=10 uM				
Antihepatotoxic 5-20 mg/kg lpr	Shukla, B., Visen, P.K.S., Patnaik, G.K., Tripathi, S.C., Srimal, R.C., Dayal, R., and Dobhal, P.C. Hepatoprotective Activity in the Rat of Ursolic Acid Isolated from Eucalyptus Hybrid. <i>Phytotherapy Research</i> 6: 74-79, 1992.			
Antihistaminic	Tsuruga, T., Chun, Y.-T., Ebizuka, Y., and Sankawa, U. 1991. Biologically Active Constituents of <i>Melaleuca leucadendron</i> : Inhibitors of Induced Histamine Release from Rat Mast Cells. <i>Chem. Pharm. Bull.</i> 39(12): 3276-3278, 1991.			
Antihyperlipidemic				
Antiinflammatory 1/3 indomethacin				
Antiinflammatory IC24=500 mg/kg				

Antileukemic IC50=2.5-17.8 ug/ml	
Antilymphomic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.
Antimalarial IC50=28-37 ug/ml	
Antimetastatic IC80=10 uM	
Antimutagenic IC57-80=80 mg/kg	
Antinephritic IC50=6-7.5 uM	
Antiobesity?	Internat. J. Oriental Med. 16: 4.
Antioxidant IC50=10 uM	
Antiperioxidant IC35=200 ug/ml	
Antiplasmodial IC50=28-37 ug/ml	
Antiproliferative IC50=15-20 uM	
Antistaphylococcic	
Antithromboxane IC50=50 uM	
Antitrypanosomic	
Antitumor	Cancer Research, 54: 701, 1994.
Antitumor (Breast) 0.5% diet	
Antitumor (Breast) IC50=15-20 uM	
Antitumor (Cervix)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antitumor (Colon)	
Antitumor (Lung)	
Antitumor (Ovary)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antitumor (Stomach) IC50=15-20 uM	
Antitumor (brain)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antitumor-Promoter	Planta Medica, 57: A56, 1991.
Antiulcer	Shukla, B., Visen, P.K.S., Patnaik, G.K., Tripathi, S.C., Srimal, R.C., Dayal, R., and Dobhal, P.C. Hepatoprotective Activity in the Rat of Ursolic Acid Isolated from Eucalyptus Hybrid. <i>Phytotherapy Research</i> 6: 74-79, 1992.
Antiviral IC85=18 ug/ml	
Aromatase-Inhibitor	
Beta-Blocker	
Beta-Glucuronidase-Inhibitor ~100 mg/kg	
CNS-Depressant	
COX-2-Inhibitor IC50=130 uM/	
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide	
Cardioprotective	
Cardiotonic	
Choleretic 5-20 mg/kg orl	Shukla, B., Visen, P.K.S., Patnaik, G.K., Tripathi, S.C., Srimal, R.C., Dayal, R., and Dobhal, P.C. Hepatoprotective Activity in the Rat of Ursolic Acid Isolated from Eucalyptus Hybrid. <i>Phytotherapy Research</i> 6: 74-79, 1992.
Cyclooxygenase-Inhibitor	Ringbom, T., Seguar, L., Noreen, Y., Perera, P., Bohlin, L. 1998. Ursolic Acid from Plantago major, a Selective Inhibitor of Cyclooxygenase-2 Catalyzed Prostaglandin Biosynthesis. <i>J. Nat. Prod.</i> , 61(10): 1212-1215.
Cytotoxic 50 ppm	
Cytotoxic ED50=3.75 ug/ml	
Cytotoxic 7.2 uM	
Diuretic	
Elastase-Inhibitor IC50=~15 uM	
Hepatoprotective 1-100 ug/ml	
Hepatoprotective 10 mg/kg	
Hypoglycemic	Ivorra, M.D., Paya, M., and Villar, A. 1989. A Review of Natural Products and Plants as Potential Antidiabetic Drugs. <i>Journal of Ethnopharmacology</i> , 27: 243-275, 1989.
Hypotensive	
Immunomodulator	
Leucocytogenic	
Lipoxygenase-Inhibitor IC50=0.18 mM	
MMP-9-Inhibitor IC80=10 uM	
Ornithine-Decarboxylase-Inhibitor	

Piscicide	
Potassium-Sparing 3 mg/rat	Iwu, M.M. 1993. Handbook of African Medicinal Plants. CRC Press, Boca Raton, FL 435 pp.
Protease-Inhibitor IC50=18 ug/ml	
Protisticide	Chemical Express, 7: 285, 1992.
Quinone-Reductase-Inducer 5 ug/ml	Lee, S. K., Song, Y., Mata-Greenwood, E., Kelloff, G.J., Steele, V. E., Pezzuto, J. M. 1999. Modulation of in vitro Biomarkers of the Carcinogenic Process by Chemopreventive Agents. Anticancer Res., 19: 35-44.
Sodium-Sparing 3 mg/rat	Iwu, M.M. 1993. Handbook of African Medicinal Plants. CRC Press, Boca Raton, FL 435 pp.
TOPO-2-Inhibitor	
Trypanocide	
Vasopressor	

VANILLIN	Leaf	--	--	*
Activities (28)				
Allelochemical IC50=4.26 mM	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.			
Allergenic				
Antianemic				
Anticancer				
Antidrepanocytic				
Antiescherichic 10-100 mmol/l				
Antilactobacillic 10-100 mmol/l				
Antilisteria				
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.			
Antioxidant #NAME?				
Antipolio	Economic & Medicinal Plant Research, 5: 194.			
Antiradicular 7 x quercetin				
Antisickling				
Antitumor				
Antitumor-Promoter				
Antiviral	Economic & Medicinal Plant Research, 5: 194.			
Antiyeast 8-30 mM				
Bacteristat 10-40 mmol/l				
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.			
Candidicide 8-20 mM				
Choleretic	Rinzler, C. A. 1990. The Complete Book of Herbs, Spices and Condiments. Facts on File, New York. 199 pp.			
FLavor FEMA 50-20,000	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry			
Fungicide	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
Immunosuppressant				
Insectifuge?	Martindale's 28th			
Irritant				
Perfumery				
Pesticide				

WATER	Seed	--	72000.0	-0.6	*
WATER	Leaf	--	55000.0	-3.75	*